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## **CAPABILITIES DEVELOPMENT AND PLATFORM STRATEGY IN INTEGRATED SOLUTIONS: THE CASE OF BT GLOBAL SERVICES**

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### **Abstract:**

Incumbent telecommunications operators such as BT, Deutsche Telekom and France Telecom in Europe have been suffering increasing competition which is threatening revenues from traditional voice services. Smaller operators (e.g. C&W and Colt), Internet-based firms (e.g. Google and Yahoo), cable TV firms (e.g. NTL: Telewest) and satellite TV firms (e.g. Sky) are among the competitors in an increasing convergent market. In order to survive and grow in this competitive environment, the incumbent telecom operators are investing in delivering integrated solutions to large customers. The business of integrated solutions demands different capabilities from the ones required for the traditional voice services. This paper investigates such capabilities and the application of the platform strategy, common in the IT market, in order to reorganise the incumbent telecom operators towards a customer-centric approach, and to cope with the wide range of competitors. Through the analysis of successful delivery of integrated solutions as major projects undertaken by BT Global Services, a business unit of BT in the UK, the paper concludes that one major customer-centric strategy of BT is to engage with large customers, building their networks as platforms, and co-evolving with its own platform called BT 21st Century Network (BT 21CN). Such platforms present both the features of reusability of subsystems and interfaces, and the exposure to third party firms with the aim to drive industry innovation.

# **Capabilities Development and Platform Strategy in Integrated Solutions: The Case of BT Global Services**

## **1. Introduction**

Incumbent telecommunications operators have been concerned with business renewal and growth after the downturn in the beginning of the 21st Century. They have been reorganising themselves in order to remain competitive in the face of declining revenues of traditional services, fierce competition, major technological change, and financial difficulties after the financial bubble burst in telecommunication and Internet related companies occurred at the beginning of the 2000's. Such traditional telecommunications operators are changing and developing their capabilities in order to remain competitive. In particular, this paper is concerned about the capabilities development and innovation processes of incumbent telecommunication operators (like BT, Deutsche Telekom and France Telecom) to create and deliver new services in the course of adopting the Internet Protocol (IP) in large scale in their core networks, migrating their infrastructure and transitioning to the NGN (Next Generation Network).

The strategy set forward by BT in the 1990's was an expansionist one, with the vision of becoming 'the most successful worldwide communications group' (BT, 2000, p. 2). As this strategy led to unprecedented and unsustainable levels of debt, worsened by the downturn in 2001-2002, BT set forward a new strategy in 2002, prioritizing the customer as one of its aims. This strengthened the business of integrated solutions, represented by its networked IT services, which usually starts by identifying and defining customer's needs. The first issue is about how to segment and choose such customers. The business of integrated solutions can become unfeasible and unprofitable if the firm does not implement it in a systematic way. Both customer segmentation and prioritization, and organisational design to provide this type of business model are important.

Prioritizing the customer, i.e., customer focus or customer centricity, is not a new concept in the telecommunications industry. For example, Mansell (1993, p. 111) stated that:

Towards the end of the 1980s, British Telecom engineers and technicians adopted a more customer-friendly vocabulary. Network design would be *customer facing*. The R&D division was expected to sell its services to other divisions which were interacting

directly with customers. The orientation towards the demand side of telecommunications network design was being driven by the company's aim, which was to become an international manager of telecommunications networks.

Looking back to the 1990s, it seems that the *intention* to be customer focused (centred or oriented) was present, and it set the ground for the practical moves taken by BT and others in the 2000s to materialize customer centricity. The business of integrated solutions, established by BT Global Services in 2003 as a business unit (at the same level of BT Retail and BT Wholesale), is not new for BT, as systems integration and consultancy services have been growing organically and through acquisitions since 1997. The emergence of IP/MPLS technology helped though to enhance the business of integrated solutions, as this technology has been proving to be superior in terms of consolidating networks of large customers that grew in a fragmented way with different types of technology deployed according to local needs. As the globalisation has been taking place, local needs of expanding companies gave place to global needs and consolidation. IP/MPLS technology and globalisation pace became a good match and a source of expansion and revenues for telecommunications service providers like BT.

Integrated solutions need to be analysed as a combination of market/customers, platforms and capabilities (cf. Yang and Jiang, 2006, Meyer and DeTore, 1999). This combination is relevant since most of the literature on integrated solutions (e.g. Davies et al., 2001, Davies and Hobday, 2005, Davies, 2003, Davies, 2004) examines the issues from the supplier perspective, underplaying the role of the customer/market in the analysis. Besides that, the role of platforms in integrated solutions is barely addressed. And aspects of project marketing and project management can be considered in conjunction.

Within the context of BT Global Services, the aim of this paper is to deepen the understanding of the development of capabilities and platforms in the business of integrated solutions through the analysis of a series of cases of integrated solutions. The most notable is the Unilever case, which was a major project that was considered a landmark for BT Global Services. Besides that, a set of other 182 cases were analysed. The analysis shows how the capabilities are deployed for specific customer segments and the importance of platform thinking to make the business sustainable and profitable. Platform thinking becomes important not only to deploy the provider's own platform

(such as the BT 21CN), but also to provide a platform for the customer, with the aim of cost reduction *and* development of new applications and services. The borders between the provider's and customer's platform become blurred as increasing number of large customers choose to outsource its IT network to large providers like BT. Customers use the platform not only to develop marketable new products and services, but also to improve their own business processes.

This paper is divided as follows. A literature review is developed in section 2. Section 3 discusses the importance of understanding customer needs for the ICT-based integrated solutions that incumbent telecom operators are able to provide. Section 4 shows the dynamics of developing platform for integrated solutions. Section 5 shows the most important capabilities and the role they play in the business of integrated solutions. Section 6 provides a discussion combining customer needs, platforms and capabilities, and comparing to the approaches of other firms. And finally, section 7 presents the main conclusions of the chapter.

## **2. Literature Review**

This section develops on the existing literature on integrated solutions and platform strategy which support the framework of analysis of the empirical data.

### **2.1 Integrated Solutions**

Integrated solutions can be seen in many perspectives, like the move from manufacturing to services (Wise and Baumgartner, 1999), and the solutions-based projects (e.g. turnkey solutions, global outsourcing solutions, Public-Private Partnership (PPP) and Public Finance Initiative (PFI)) (Davies and Hobday, 2005). The solutions-based projects fall into the category of large and complex projects, involving the transaction between firms (business-to-business market) often involving the usage of Complex Products and Systems (CoPS). According to Brady et al. (2005), integrated solutions have its origins in the Build-Operate-Transfer (BOT) projects of the 1980's, further elaborated by, for example, Kumaraswamy and Zhang (2001).

Cova and Salle (2007) point out that integrated solutions was originated in the domain of project business. In this context, as mentioned in the former section, a project involves a

transaction between a buyer and a seller, so the role of customer is important, as stated in a definition of integrated solution by Brady et al. (2005) as 'unique combinations of products and services that address a customer's specific business problems' (p. 360). The customer's specific business problems are usually associated to customer's needs and wants. And the business of integrated solutions usually starts by identifying such customer's needs and wants. Although the customer seems to be within the scope of integrated solutions, the literature on integrated solutions tend to neglect the role of the customer in the analysis (see, for example, Davies (2003), Davies and Hobday (2005), Brady (2005), Windahl and Lakemond (2006), Oliva and Kalenberg (2003), Ceci and Prencipe (2008)). This happened because these researches concentrated on the supply side and on the move to integrated solutions of those suppliers, considering issues like organisational capabilities and strategies. There are some exceptions though, for example Cova and Salle (2008), who investigate the interaction of customer and supplier to co-create value, considering a customer as a resource for the integrated solution. Integrated solution becomes then a customer solution (tailored for the customer's specific needs and wants), and Tuli et al. (2007) argue that 'customer solutions embody the new service-dominant logic' (p.1). The new service-dominant logic is the one discussed in the previous section 2.4, based on Vargo and Lusch (2004). Day (2006) argues that 'the crux of Vargo and Lusch's argument is that a service perspective is superior to a goods-centered view because it emphasizes solutions [...]' (p.88). This also reflects why Brown (2007) suggests that most marketing practitioners may prefer to use the expression 'solutions-dominant logic' instead of 'service-dominant logic'. Thus, the interconnection of service-dominant logic and integrated solutions are made evident.

Further look at the integrated solutions approach reveals that, although they exist to address customer's needs and wants, often the boundaries of this concept are not very clear. As many suppliers of products, seen as tangible goods, may start to offer services around those products, and as products are supposed to solve a customer problem (or satisfy a need), there might be a tendency to consider that any product sold with services associated to it (e.g. installation and maintenance) as an integrated solution. Many retailers do or can do that and they are not considered as providers of integrated solutions. Thus, virtually any selling can become an integrated solution. Some suppliers may say:

‘If a customer needs a box to solve a problem, we will provide that box and the problem is solved’(Shepherd and Ahmed, 2000, p. 104), but this is far from the business of integrated solutions and the capabilities required to do so. Such a confusion may arise where different sizes of firms (small, medium and large) are investigated and there is no customer associated to each solution. In this cases, integrated solutions can be confused with systems selling (Davies et al., 2007). In order to avoid this confusion, integrated solutions involve projects instantiated within a customer, based on a jointly articulated need (with the supplier) and involving the integration of components from third parties. So, there is a need to identify a customer (a business one) in order to be considered as an integrated solution.

This instantiation within a customer implies that the business of integrated solutions is managed by customers, not by isolated products or services, by firms that are usually called customer-centric organisations (see, for example, Galbraith (2005)). In this type of firm, performance is measured by customer (customer satisfaction), and not by the amount of discrete products and services commercialised. Such a business requires close relationship with the customer. That is why the role of the customer is significant in the co-creation of value between the supplier and customer. This is the view of the service-dominant logic (discussed in the previous section) which serves as a support for the business of integrated solution.

While integrated solutions address customer’s needs and wants, Jaworski and Kohli (2006) suggests that both customer needs/wants and firm needs/wants should be addressed. These approaches are not in conflict, as integrated solutions are usually studied from the firm/supplier perspective, considering the customer needs and wants. Thus, integrated solutions have the firm needs/wants implicit in the service being provided. This is a business model that can be very difficult for the provider to establish a business that is profitable and sustainable. IBM, for example, has experienced problems with the business of integrated solutions (Davies, 2003).

The service-dominant logic may serve as a better explanation for Davies (2004) value stream approach to integrated solution. He claims that service firms like C&W and WS Atkins, moving from a service base, are ‘moving into integrated solutions from both

upstream and downstream positions to occupy the high value space situated between manufacturing and services' (Davies and Hobday, 2005, p. 216). Another explanation would be that service providers like C&W are changing their logic into what is being called service-dominant logic (Vargo and Lusch, 2004). Although such companies have a base in services, their dominant logic was to sell services as goods (within the goods-dominant logic). The shift to service-dominant logic is followed by a closer interaction with the customer, trying to understand its business, and being involved in what the customer needs and what the customer wants to do with the service at a business and strategic level. The big difference turns out to be the relationship with the customer and the systems integration that occurs in the customer's premises and which is managed by the service supplier, not by the customer (as it was usually done). In this explanation, the firm does not change its position in the value stream, moving upstream or downstream (as suggested in Davies (2004, p.738). Firms with a base in services remain in services, but change their mindset or logic about services, adopting the service-dominant logic.

Integrated solutions and systems integration are deeply interconnected. Prencipe et al. (2003, p. 1) argue that systems integration has two 'faces' as R&D has two faces according to Cohen and Levinthal (1989): (i) the internal activities to integrate inputs in order to make new products and services, and (ii) the external activities to integrate resources, skills and knowledge from other firms (not in the same payroll) in order to make even more complex products and services. Integrated solutions add one more component: the customer need. Starting with a customer need, suppliers take responsibility to design and offer a solution to meet that need. Integration, once done by the customer itself, is now done by the supplier, usually at the customer's premises. For the supplier, this has advantages of (i) increasing the scope of the business (implying in more revenues); (i) reusing previous solutions, reducing costs of new deployments; and (iii) refining existing solutions and capabilities and designing new ones that may be deployed elsewhere in new customers. Although this seems advantageous for the supplier, this business of integrated solutions requires the development of new capabilities and can be very risky from the financial perspective. Among the new capabilities developed by product and service firms moving into integrated solutions business are (Brady et al., 2005): systems integration, operational service, business

consulting and financing capabilities. And the new skills are: key account management, risk analysis and management, financial acumen, legal skills, information management and innovation management. Although not explicitly mentioned, project management also plays an important role in the traditional way of managing time, cost and quality.

## **2.2 Platform Strategy**

Platform is defined in Oxford Dictionary as ‘level surface raised above the surrounding ground or floor, esp one from which public speakers, performers, etc. can be seen by their audience’ (Oxford, 1989). This definition highlights an important feature of platforms: visibility to the audience. The visibility corresponds to some kind of exposure to the audience, who can be customers or users in the telecommunications industry context. Thus, platform seems to be better than system, as this last one does not highlight the visibility or exposure of the system to customers and users, such a way that these last ones can influence its design and the products and services derived from the platform. Interestingly, Gawer and Cusumano (2002, p. 2-3) define high-tech platform as ‘an evolving system made of interdependent pieces that can each be innovated upon’. This definition seems to be still highly dependent on system and does not emphasize the visibility or exposure of the system to the ‘audience’. It emphasizes though the interdependency of the various systems’ parts and the evolution through innovation of each part. These are characteristics already emphasized in systems.

The concept of platform also may give the notion of something in transit, moving or ultimately changing. This is the case of the launching platform for spaceships, the boarding platforms in train stations and airports, and the petroleum platforms. Both the infrastructure and the service level depend on some degree of openness for the different actors to interact and integrate their efforts into new products and services.

This section elaborates on the concept of platform as a strategy for firms to overcome the constraints of cost, speed-to-market and customer experience *at the same time*. There are two major approaches to the platform thinking and strategy, the internally and externally focused strategy approaches for innovation.



### **Internal Platform-based approach for innovation**

The internal (to the firm) approach of platform recognises ‘a subsystem or interface that is used in more than one product, system, or service’ (Meyer, 2007, p. 149). This is the product platform, where the reusability of components to improve time-to-market and cost reduction in product and service development is emphasized (see, for example, Meyer and Mugge (2001), Meyer and DeTore (2001), Tatikonda (1999), Meyer and Dalal (2002)). This stream of literature is inspired by the automotive industry, where, for example, Meyer (2008) shows how Honda reuses its engines in different models of cars for different market segments. It is also applicable to IT (e.g. IBM) and services industries as shown in, for example, Meyer and Mugge (2001).

The concept of platform is a ‘common sense way for a firm to leverage technologies into new markets and, at the same time, reduce per-unit costs through more efficient production and procurement (Meyer and Mugge, 2001, p. 26). Here the idea of platforms is applied to products (usually mass produced) and from the supplier perspective (like IBM and SUN). And the issue of product complexity is very generic and not well defined. Usually this literature of product platform is connected to manufacturing, and thus production. This is not the case for incumbent telecom operators that have outsourced their equipment development to specialised equipment providers. Also, the reduction in per-unit cost does not explore the potential of different forms of collaboration, as the Internet culture is making it possible and more popular.

### **External platform-based approach for innovation**

The notion of platforms emphasizes the visibility or exposure of the internal system to the external system. It also lends the idea of flux or flow in the interfaces

Gawer and Cusumano (2002) put forward the idea of platform leadership, and the examples are firms like Intel, Cisco Systems and Microsoft. Their perspective, as well as of those from the product platform literature, are from the suppliers perspective and usually the literature does not focus on how large users build their platforms in order to deliver new services. Telecom operators now use Cisco Systems and Microsoft product and systems platforms to build their network platform. The leadership (from the

suppliers' perspective) consists in establishing market standards and architectures that are eventually be adopted by large users.

The discussions about platform in the literature usually concentrate on the product as the unit of analysis (see, for example, van de Paal and Steinmueller (1998) and Mansell and Steinmueller (2000) for a discussion on multimedia platforms, analysing DVD and CD-ROM; Gawer (2000) about Intel's microprocessor; Gawer and Cusumano (2002) about Intel, Cisco, Microsoft, Palm, NTT DoCoMo and Linux). The notion of platform does not go to the large network platforms being implemented by incumbent network operators, like BT, France Telecom and Deutsche Telekom. Gawer and Cusumano (2002) used the example of NTT DoCoMo to illustrate how NTT is using different business models to create an environment where third parties are encouraged to develop applications for their mobile phones. This is part of the scope that this research intends to achieve. The platform being developed is for any device (mobile and fixed phone, PC, laptop, blackberry, iPod, Palm,...).

### **3. Understanding major customer needs: Unilever**

The business of integrated solutions in BT is usually called 'networked IT services'. It represents the convergence of three domains (network products, IT products and professional services), and it is 'adjacent to [BT's] heritage and strength'<sup>1</sup>. It means that the core competence of BT in building and maintaining a network is preserved. The difference is that BT moves from not only building and maintaining its own network, but also to building and maintaining other organisation's network as an extension of its own.

Much discussion has been done around the issue whether BT (and other incumbent telecom operators) should change its core competence and become a content provider in order to avoid becoming a low cost pipe network. BT, however, denies of becoming a 'content producer', but a means to deliver (aggregating and distributing) content to customers, taking care of billing and digital rights management<sup>2</sup>. The current view is that BT is in the short- and mid-term positioning itself within the building and maintenance of network infrastructure, with the provision of some application software on top of it. And

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<sup>1</sup> From a presentation of a BT executive

<sup>2</sup> From interview with BT executive

in the long-term, BT is preparing itself to compete in the applications software arena, concentrating on those applications which have a strong network capability component in it.

In order to understand customer needs, the analysis starts with a BT's major customer which was important to set up the business of integrated solutions and consequently BT Global Services: Unilever. Unilever has a special meaning to BT as it was the contract that provided a step change in BT Global Services' business.

In this type of business it is usual to have a tender process, and Unilever contract had one. The short list of bidders included AT&T, BT, Deutsche Telekom, France Telecom and Sprint. This contract is deemed to be a strategic partnership, as the relationship between BT and Unilever went beyond the functionalities of the solution to the shared and common visions of the future. To reinforce that, 'BT's ambition to move into a global space matched Unilever's needs'<sup>3</sup>. International presence is part of BT's overall strategy and one of the main targets to be achieved by the networked IT services through BT Global Services. In the same way, as globalisation is a driving force for large multinational firms, so it is for Unilever.

In 2006, Unilever had presence in 150 countries, with physical business in 100 countries and 365 manufacturing sites spread throughout the world<sup>4</sup>. In order to meet the demands of communications of firms such as Unilever, BT had to expand into other countries where the customer has presence and demands interconnection. One of the reasons why BT won the contract was its owned network coverage and presence through partnerships in locations where BT did not reach through its own network. This 'geographic capability' is of major importance in this type of business for this type of customer and market.

Another aspect of Unilever's problem was that it had several contracts for various parts of their network: individual voice and mobile service contracts, and data networks for each country. There was a need to simplify this operation in order to have as few contracts as possible and, as a result of that, cut costs due to the management of such

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<sup>3</sup> From a presentation by a Unilever executive

<sup>4</sup> From a presentation by a Unilever executive

diverse contracts and providers, and possibly the cost of the services themselves. Also, it was reached a consensus that an external partner could deal with such cost and quality issues better than Unilever: '[Unilever] makes soup and soap, and as a company, it particularly does not want to do IT, but it has to do IT'<sup>5</sup>. This is a typical example where the customer core competence is outside the IT arena, but it needs to use IT in order to have flexible, agile and efficient operations. And its own IT activities became so huge and complex, that it is worthwhile to have a strategic partner to take care of it and its evolution. An understanding of the business needs of the customer at the strategic level and matching with the provider's own strategy and values become important for a long term and effective partnership. Another distinctive point of the large projects in integrated solutions is the shared success between customer (Unilever) and provider (BT): 'BT's success is [Unilever's] success and vice versa'<sup>6</sup>. This is why even competitors may cooperate in some major projects as it was shown by BT21CN, as the success each supplier depends on the success of the whole project, even if they are competitors in other projects and markets.

As the ICT infrastructure becomes more complex in various industry sectors, there is then a necessity of partnering. And that is the 'golden opportunity' of networked IT services. BT approaches the market from the perspective of a network provider, from a base in network services, aggregating IT products from partners and developing and sub-contracting professional services. Other firms may approach from the IT path. The most famous example is IBM, which has reinvented itself in the 1990's and is now a major provider of integrated solutions. And other firms like Accenture may approach from the professional services perspective and aggregate network and IT products and services. The common denominator is the identification of the business opportunity, and working on a business proposition that will likely rely on partnerships (even with competitors in other projects and markets), as problems are at a level of complexity that one single firm cannot resolve them alone.

Interestingly, Unilever, with its 350 operating companies around the world, would like to move to One Unilever. This means to consolidate the company into a more coherent

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<sup>5</sup> From a presentation by Unilever executive

<sup>6</sup> From a presentation by Unilever executive

company. That initiative involved moving from 1600 to 400 brands globally. This represents a huge change culturally, politically and financially. Each of those 350 companies had its chairman. And BT also had the strategy to move to One BT. The main problem of having that conglomerate of companies is that each company tends to work for its own targets, and tends not to have the culture to leverage their scale, technology, knowledge and resources, and present the firm to the customer as One Company. Both BT and Unilever are examples of companies that are trying to achieve 'higher levels of strategic integration between their business and subunits' and that 'each unit head feels responsible for the performance of other units as well as for their own, and actively looks for ways to help them deliver' (Doz and Kosonen, 2008, p.80). Although the idea of One Company may seem that it means the centralisation of decisions, it is different from that. It is about the collective commitment of the top management (Doz and Kosonen, 2008) to support each other's business, sharing a common vision, and leveraging resources. Some companies though continue to operate with the philosophy of being a conglomerate of business, which was the basic idea of Jack Welch when he started to reorganise GE in the 1980s (see, for example, Slater (1999)).

Unilever signed a multi-year contract with BT, and it was said to be a 'leap of faith'<sup>7</sup>. Unilever had a contract with WorldCom at that time and in the first half of July 2002 WorldCom failed and the telecom industry was in a bad shape. Unilever decided to sign with BT in December of 2002. This reveals a major contextual influence on winning a contract: the failure (bankruptcy) of the previous provider at the time of negotiating the contract. The 'leap of faith' was due to the fact that this type of multi-year contract has many challenges and it usually does not work as it was supposed to do in the early stages (usually in the first three years). And to resolve that it is necessary to invest in the relationship and in the values of the provider (BT). It is necessary to believe that the firm (BT) will be able to execute. Although evidences and prior experience are requested, they do not guarantee success. At the end, it is necessary to believe that BT (the provider) will do what they are saying they will do, that is the 'leap of faith'. In other cases, previous successful relationship helps to lower the barriers for the 'leap of faith'. This case shows

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<sup>7</sup> From a presentation by Unilever executive

though that there are many aspects of the relationship which needs to be worked through the project.

### **Cost control and reduction**

One important aspect of the customer need is the cost reduction issue. This is usually translated into reduction of operational expenses, and this can come from various aspects of the organisation operation. However, before trying to reduce cost, many firms have difficulties in cost control. One usual example is the cost of roaming for mobile calls. As it is more convenient, executives and staff can use the mobile phone instead of the fixed phone line, mainly when they are travelling, participating in a conference, for example. As the cost centres are spread over the firm, the bills may come from different parts of the organisation and it is very difficult to know who is spending how much. The major evidence is that the bill with telephone calls is expensive and increasing<sup>8</sup>. Other firms have operational problems with their communication network, like communicating real-time with facilities geographically dispersed (using not only voice, but video and graphics). IP/MPLS network can offer now reliable services and even produce cost efficiencies in the operation.

Although the cost reduction is utmost important to make the business case for the implementation of the solution, for high demanding customers like the large multinational corporations, it is important that the solution really works. That is where the resiliency of the incumbent telecom operators makes a difference. Customers soon forget about cost reduction if the solution does not work properly<sup>9</sup>. Cost reduction *and* appropriate customer experience need to go together. It is not enough to have one or the other. And that is the domain of convergence, the domain of *and*, not *or*, where different aspects of the service are blended, and it is difficult to consider them separately. Each part *and* the synergy count.

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<sup>8</sup> From a presentation by BT executive

<sup>9</sup> From a presentation by BT executive

### **Customer understanding of integration issues**

The value proposition in this business is to guarantee end-to-end performance, so 95% of BT's customers ask to manage the entire domain<sup>10</sup>. Only this way it is possible to guarantee end-to-end performance. Then, in most cases, customers do not want to buy solutions as point products, as they understand that there is an integration issue. The provider needs to understand the impact on other parts of the system and act on those, or at least make recommendations for the customer. Integration with existing systems owned by the customer is necessary. And this is a different aspect of systems integration found in the development of complex products and systems. Customers have already made some investments in existing systems that they do not want to lose. And also there are those situations where the investment was done and the solution does not work as expected. For example, when the customer had opted before to buy from different point products that do not integrate appropriately. And the provider needs to deal with this erroneous investment and minimize the loss of earlier investments<sup>11</sup>.

At this point it is important to make a distinction between integrated solutions and systems selling. Usually the system seller has still the mentality of selling its system as a point product wrapped with some services connected to the product, i.e. goods-dominant logic prevails. The mindset for integrated solutions is that services are the dominant part of the business: the service-dominant logic. And the consultative selling is done having in mind the customer's business requirements, going even up to the strategic level. The selling is much more based on relationship, envisioning a long-term relationship. And it may consider partial solutions from partners and even competitors. Customers may require that partial solutions to be integrated be from competitors of the provider in other markets and projects in cases where the customer has already substantial investment in systems and equipment from the competitor and the provider needs to integrate them with other partial solutions. Although this may sound strange, of course, not all firms are willing to do it. It is a practice that may occur in the telecom industry<sup>12</sup>, and the first

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<sup>10</sup> From BT executive presentation

<sup>11</sup> From BT executive presentation

<sup>12</sup> One interviewee said: 'Telecommunications industry is very promiscuous, you know'.

major firm to have institutionalised it was IBM in the 1990's (see, for example, Gerstner (2002)).

The provider's emphasis on attending customer's needs for the end-to-end service is to manage the risk for the customer. Assuming end-to-end integration of the services becomes then a process of de-risking for the customer. End-to-end integration also requires a different attitude from the provider that is different from the point product selling mindset: the substantial rationality capability. It requires people with not only technical skills but also with the psychological temperament to be concerned with its own part of the solution and with its impact on the whole<sup>13</sup>. This may not be achieved with only a simple retraining. Understanding of customer needs goes beyond the technical issues, and includes the cultural and governance aspects of the customer as an organisation in order to make the project successful.

#### **4. Developing platforms for integrated solutions**

A platform can be understood as 'a subsystem or interface that is used in more than one product, system, or service' (Meyer, 2007, p.149). This definition can be applied to the service context, where reusable subsystems, interfaces or processes are used to develop services faster while reducing costs.

The analysis of the cases points to a different dynamics from the traditional literature. Usually the literature assumes that it is possible start designing modular architectures from the very beginning, as it assumes the development of products for the mass market. And it does not emphasize the cumulative nature of the platform in the form of repeatable solutions that are built as long as the provider (BTGS in this case) deploys integrated solutions in customers of a determined market segment. Repeatable solutions as platforms emerge from a process of variation, selection and retention in interaction with customers from project to project. This process of refinement is usually done under a contract with the customer. So, the emerging platforms are financed by customers, and the replication in other customers may decrease the costs of subsequent projects.

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<sup>13</sup> From interview with BT21CN supplier



Integrated solutions are instantiated through a project within a customer. Thus, integrated solutions are not decoupled from a customer. If a firm has a solution in the form of a system or product, but it is not associated to a customer addressing its business and technological needs, it is not an *integrated* solution yet. Solutions as systems selling are offered; integrated solutions are offered *and* deployed. There is always an explicit customer involved.

The process of refinement and definition of emerging platforms as repeatable solutions is what contributes to the sustainability of the business over time. One important element of the business of integrated solutions is that every investment in a solution for a customer is to be leveraged in other customers. As one BT executive said: ‘Wherever we win big outsourcing and managed service contracts and we have to invest in infrastructure or people to service those contracts – and this is the margin magic – we will look to leverage that investment time and again to service other customers’<sup>14</sup>. Leveraging investments is an important aspect of this business, and platforms as repeatable solutions are re-used to accomplish it.

The business model of integrated solutions is tough because for its profitability it depends on the long-term relationship with the customer and on the ability of the provider to reuse its solutions. As there are many projects under execution at the same time, an appropriate process of knowledge access and transfer needs to be in place. Creating this repeatability and reuse has not been easy for BT. It is also influenced by the fact that this depends on the level of maturity or life-cycle of the whole business: BT Global Services was established in 2003, although consulting and systems integration activities had already existed before for many years (since 1997). This may explain an initial lack of repeatability in the cases analysed as they cover the period from 2003 to 2007 approximately. The project may be profitable in itself, and on average, it takes between 2 and 3 years for a large integrated solution project to contribute to the profitability of BT. And it takes around 3 to 4 years for the cumulative cash flow to become positive<sup>15</sup>. This is a type of business that requires financial strength and consistency of high quality services for an extended period of time dedicated to defined customers. The profitability

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<sup>14</sup> From BT executive presentation

<sup>15</sup> From BT executive presentation

of the business model depends much on re-signing the contracts, i.e. extending the contract for a longer period of time which may extend the profitability period.

This business also depends on referrals. And customers usually ask to talk to or visit customers where a similar integrated solution was implemented. The customer wants to assess to what extent the solution offered was deployed before, reducing execution risks. This is another aspect of the platform, which is related to demonstrate the capabilities of the provider in similar projects in other previous customers.

### **Platforms driving innovation and new businesses**

There are some cases where BT tries to use its own experience solving its own problems of building and maintaining networks where it can identify a new platform and transform it in a new business. Some examples are the 21C Global Venture, where tools, techniques and design capabilities developed for BT21CN can be sold and reused in other telecom operators wishing to make the transition to NGN; M&A practices, where BT created its own methodology for M&A and is providing consultancy based on its own M&A experience; Call Centre Management (CRM – Customer Relationship Management) and Account-Based Marketing Communications, where BT uses its own experience in providing customer service and marketing communication services of its own internal projects to customer projects.

One of the characteristics of the platform leaders is to drive innovation in the industry. And certainly this is starting to be the case for BT. However, there is something different for the business of integrated solutions. This is a type of business that drives innovation usually under contractual terms. An opportunity is identified by BT and there is a large customer involved. It is not to address mass market<sup>16</sup>. In the case of Intel and Microsoft, the mass market is usually addressed and the customer has a diffused notion. It refers to develop point products or systems using the platform frequently in non-contractual terms. And in the integrated solutions innovation is within a defined context within a defined customer usually under contractual terms.

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<sup>16</sup> At least for the case of BTGS. there was a recent restructure of BT, creating BT Design and BT Operate in 2007 to develop and deploy software-driven products and services for customers in general, including the mass market.

### **Extending the platform to customers**

In the business of integrated solutions in ICT-based services, the concept of platform would be important in order to develop repeatable solutions which could be re-used in subsequent projects, and decreasing cost and improving the effectiveness of the solution. The concept of platform as ‘a subsystem or interface that is used in more than one product, system or service’ (Meyer, 2007, p. 149), the focus is on the subsystem, like the engine made by Honda being used in different cars and different appliances (Meyer, 2007). For the business of integrated solutions, as the cases analysed show, the re-use happens at the product level, which may be part of the provider’s product portfolio or provided by a third party. It can be software-based, like the BT OneBillPlus and BT Billing Analyst, two BT software-based products which help customers to better control their telecommunications expenses. These products can be commercialised as a point service or as part of a bigger project.

From the cases analysed, the knowledge transfer occurs mainly regarding the customer segment in which the project is undertaken. For example, projects made in the healthcare area are used as reference for customers and for subsequent projects. The value of knowledge transfer seems to be higher in projects within similar contexts. There is also evidence that this type of business relies much on knowledge transfer from the provider (BT) to the customer. Some customers praised BT for sharing knowledge about the specifics of the network and services in a way that is not common in the industry. This practice would be beneficial to create a strong bond with the customer with the aim of continuing the service and being the provider of choice for subsequent undertakings by the customer.

At the level of network, the IP/MPLS network has been a significant advantage in order to deploy the convergence of networks (and services on top of it). Many cases analysed started with the need of consolidating the customer’s network. Many large firms and public institutions grew organically with different technologies (e.g. ISDN, frame relay and ATM) being deployed according to local needs. This fragmentation did not allow such customers to provide consistent services in many instances, and the cost of maintaining diverse networks was becoming too high as firms grew (due to expansion,

merge&acquisition, joint venture, etc.) and the demand for better and more services from the public institutions also increased. Networks are being used as platforms for customers to become more efficient (i.e. to reduce operational costs) and at the same time to allow the creation and provision of new services.

One of the consequences of outsourcing, merging the customer and provider network, is that resources can be released for concentrating on IT applications that are meaningful for the customer's business. Thus, new applications can be developed by customers to themselves (increasing the use of the network) or by BT to customers.

## **5. Developing capabilities for integrated solutions**

Networked IT service is the denomination of the converged services BTGS deploy in large customers. It represents the convergence of network products, IT products and professional services to offer an end-to-end solution that has a strong component of network products and services (BT's traditional core capability). Large firms have already invested large sums of money in their IT and communications systems and networks. And these are constantly evolving and needs and problems emerge as long as such firms change and grow. It becomes complex and risky for these firms to build, maintain and manage such systems and networks if it is not part of their core business. Internationalisation of such large customers makes the scenario even more complex. In this scenario is where BT has found the golden opportunity.

The highest level of capability provided by BTGS can be called networked IT service improvement capability. Cost efficiency, agility and flexibility are aims of BT and their customers. The communications needs of large customers usually cannot be thought in terms of network first and then IT, it is necessary to be thought as a whole and highly interdependent in order to produce the expected results and experience. The networked IT service improvement capability represents such synergy, blended approach to solve customer's problems holistically.

The competitive advantage of BTGS to deliver integrated solutions is highly dependent on the following capabilities: business transformation, change management, large scale

project management, process transformation, solutions design and innovation<sup>17</sup>. This is achieved having a qualified and competent team of professional services people, who have different skills from the people working with the traditional voice services. Professional services have existed in BT for some years before BTGS was established in 2003, through its consulting and systems integration divisions. However, with BTGS, professional services have intensified and BT has been hiring people from firms like IBM, Deloitte and Accenture<sup>18</sup>, which are known as strong players in the IT and professional services domain. Professional services are not support people. They are 'billable' people as it is possible to relate their work with the charges done by BT. Hiring people from the IT domain also shows how convergence is happening in practice.

BTGS can offer business IP services, business application services and business transformation services. And the more related to business transformation services the more the value of the service. This is mostly the target for BTGS: the large corporations with multi-site operations in Europe and other countries in the world. To approach these customers and to be able to offer services in business transformation, BTGS has the following three unique capabilities (Louwhoff, 2007, p. 6):

- Network (infrastructure) capability developed and refined along many years, and culminating with the initiative of BT21CN.
- IT services delivery capability and experience through major projects.
- Consulting and systems integration capabilities developed and refined throughout many years of experience.

Within such capabilities, it is a common denominator the experience and refinement of them through many contracts. Customers usually value referrals. Within the network capability, just the network presence is not enough. Customers internationalising into other markets require a high degree of resilience of the network. And that is where BT has its competitive advantage. Associated to the resilient network capability, the geographic capability is a distinctive one when offering integrated solutions to large multinational organisations in terms of being present in various countries with its own

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<sup>17</sup> From BT executive presentation

<sup>18</sup> From BT executive presentation

network or through partnerships. 'Customers are paying BT to develop a multimedia core in these countries, driven by demand'<sup>19</sup>. This is informing the partnerships and acquisitions done by BT within its internationalization strategy.

The integrated solutions opportunity is usually built from the bottom up, from the IP infrastructure. There is a portfolio of services like LAN services, IP telephony, IP contact centres, security, content management, and storage virtualization which are very reliant on the network, and to implement them it usually requires many hours of professional services<sup>20</sup>. This opportunity for professional services, integration and eventual outsourcing of the network to BT is built along BT's heritage. It is not an overnight business. So, it is very difficult to imitate. And if BTGS does a good work, it creates the relationship. And if BT can win the trust of the customer in the sense that BT can co-evolve with the customer, providing evolving services at a pace that supports the customer's business adequately, it is a relationship that might pay off.

## **6. Discussion**

The literature on integrated solutions point to a tendency of moving downstream from manufacturing to services (Wise and Baumgartner, 1999). And Davies (2004) argues that firms may be moving to integrated solutions from a technology (manufacturing) or service base. Davies (2004) uses the C&W case to illustrate the move from a service base. This case is similar, to a certain extent, to BTGS case, but there are some differences. The similarity consists in the fact that most of C&W integrated solutions projects were based on outsourcing, as this had become a huge market for IT services in general. And BT had at that time consulting and systems integration department to explore this market.

Although Davies (2004) have identified the move from a base in services, C&W and BT offer an example of one type of service to move from. This is the network service, which is highly reliant on a resilient infrastructure. Firms like Accenture and Price Waterhouse come from the IT professional services base, and IBM comes from the IT technology base (originally offering products as goods or tangible entities). The domain of network

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<sup>19</sup> Presentation by BT executive

<sup>20</sup> Presentation by BT executive

IT services identified by BTGS to operate in the integrated solutions arena is in the intersection of these three different paths: network, IT and professional services. This is one aspect of convergence and it is evidenced by the fact that those three companies are working together in many projects and competing in others. The success of this business is in identifying a need and defining the best solution for it including third party suppliers. All firms operating in the converged domain are operating in the adjacency of their core capabilities.

Usually the concept of platform is used to emphasize the commonality and uniqueness of subsystems and interfaces (Meyer, 2007), and it focuses on the capabilities of the firm to identify *internally* such common components and their diffusion to as many projects as possible. This approach usually downplays the role of standardization like ITIL used by BTGS, which offers a common framework for different parties to interact, including third party suppliers *and* the customer. This shows the role of standardization that becomes a platform for the actors to interact and collaborate. This also impact on cost reduction of the portfolio of projects over time.

The fact that BTGS has experienced financial problems with integrated solutions in 2008, like other firms such as IBM and C&W, shows that the customer focus approach may have its limitations, since what is good for the customer may prove unsustainable for the provider in the mid or long-term. The aim of integrated solutions is to minimize the risk for the customer, and offer flexibility. However, too much flexibility for the customer may have negative impact on the results for the provider (e.g. BTGS, IBM and C&W). The experiences of BTGS, IBM and C&W suggest that there might be a period in the life cycle of the business of integrated solutions (closer to the beginning) where performance suffers. The customer orientation may make such providers to be too flexible (e.g. in commercial terms) with the customers and after the maturation of the initial projects (usually a period of 3 to 5 years), well and badly negotiated projects may emerge. Usually there are problems with the risks of execution of those projects that are underestimated, and that are refined in subsequent projects. The average of the projects undertaken by BTGS is now between 3 to 5 years. As BTGS started officially its operations in 2003, this may explain that the maturation of some 'toxic' projects may led to weak financial performance by 2008. BTGS case only evidences that even hiring

people from IBM, Accenture, Deloitte, etc who may have experienced similar types of problems before is not enough. There is an organizational learning curve which, if the firm overcomes the struggling period, it can strive if the firm persists in their operational efficiencies initiatives and if the firm keeps winning sufficient customers to justify the business.

Although the business of integrated solutions represents a new type of business model to BT, it is not very different to the way BT has been operating in order to build its own network. Sometimes there is a tender process, and sometimes the negotiation is done directly based on previous successful or strategic relationship. Once the solutions are designed, projects are managed in the traditional way under the constraints of cost, deadline and specification. Tolerance to failure is limited and sometimes it is made a trial to prove the concept before large scale or actual execution takes place<sup>21</sup>.

Generic capabilities to deliver integrated solutions are: systems integration, operational services, business consultancy and financing (Davies et al., 2001, Davies, 2003, Davies and Hobday, 2005). Although referred to separately, in practice they are intertwined. In the context of BTGS, one particular capability is important to win contracts: the geographic capability, i.e. to be where the customers are and where they intend to be geographically in the world. For the sustainability of the business, it becomes important knowledge transfer and diffusion capabilities among the projects in order to improve the operational efficiencies of the portfolio of projects. Also, financing capabilities is important as it may take years for the project to contribute with profits.

## **7. Conclusions**

User needs are diversified according to different customers in different sector and market segments. BTGS decided to focus on large customers with multi-site operations with their base in Europe. Globalisation and the unique position of BT in the UK (and London) drive the opportunity for BT to explore the delocalisation of large multinationals. Besides that, customers are increasingly requiring converging IT and networking services based on business and technological needs.

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<sup>21</sup> For example, BT had to prove through a trial that its satellite technology worked for a mobile branch application for Alliance&Leicester.



BTGS has identified a 'golden opportunity' which lies in the convergence of network, IT and professional services: the end-to-end integrated networked IT services. It is built on the adjacency of the core capability of BT in network products and services. Point products and services are used to enable the selling of services in a broader scope. As the business evolves, BTGS needs to invest in the operational efficiency through repeatable solutions, i.e. the identification and definition of platforms which may be re-used in subsequent projects. The aim is to maximize the use of repeatable solutions to decrease costs. Platforms are also built based on BT's own platform and to establish customer's platforms with the aim of cost reduction and allowing new applications and services to be deployed on top of it.

Contracts for integrated solutions tend to be very risky, and during the learning process, the business may suffer some setbacks, as not only BTGS, but also IBM and C&W has suffered. The issue of sustainability of this type of business is a topic for further research.

Quality of products and services (output) is not enough as the main differentiator for this type of business. Quality of relationship built with customer becomes more relevant. Technology is not a differentiator, as it is widely accessible in the market. Quality of people and pervasiveness of the global network becomes a relevant differentiator<sup>22</sup>. BTGS is 'a service business with a network inside, not a network that does some services'<sup>23</sup> and 'service is defined first and foremost in terms of [customer's] business imperatives, rather than IT or networking requirements' (Louwhoff, 2007, p. 3). This represents a major shift in the mindset of BT to conduct their business and it evidences the increasing relevance of the service-dominant logic through the business of integrated solutions.

The length period for negotiation integrated solutions projects can vary from a few weeks to various months. It depends on various contextual factors, including urgency of the customer to meet a deadline imposed, for example, by regulatory bodies. The negotiations are ultimately envisaging that the provider locks into the on-going customer's needs and changes. The sustainable business model depends on re-signing

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<sup>22</sup> From BT executive presentation

<sup>23</sup> From BT executive presentation

contracts and long-term partnership. Projects are based not only on solving a point customer need, but in many instances to establish a platform for the customer and provider to co-evolve, identifying new sources of efficiency through cost reduction and improving effectiveness of the customer's processes, deploying new ways of doing the work required to achieve customer's aims.

The customer orientation can be seen even in the building of geographic capability based on customer's needs. When it is decided for acquisition of networks, it is in response to current and future customer's needs, not with the aim to have an expansionist strategy only (as it was BT's strategy in the 1990's).

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